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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/808,814	03/24/2004	Yanhui Sun	RD8510USNA	7602
43693	7590	02/07/2006	EXAMINER	
INVISTA NORTH AMERICA S.A.R.L. THREE LITTLE FALLS CENTRE/1052 2801 CENTERVILLE ROAD WILMINGTON, DE 19808			KHAN, AMINA S	
			ART UNIT	PAPER NUMBER
			1751	

DATE MAILED: 02/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/808,814		SUN, YANHUI	
	Examiner		Art Unit	
	Amina Khan		1751	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-20 and 22-38 is/are rejected.
- 7) ☒ Claim(s) 5 and 21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/20/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 7-11,22,24,25 and 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim language "selected from a group consisting of polymethacrylic acid and hydrolyzed maleic anhydride copolymerized with at least one monomer, and mixture thereof" recites an improper Markush group. The examiner suggests that the claim be written in proper Markush format to read "selected from the group consisting of polymethacrylic acid, hydrolyzed maleic anhydride copolymerized with at least one monomer, and mixtures thereof". Appropriate correction of the claim language is required.

Claims 34-38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim language "in association with" is indefinite. The examiner is unclear as to what constitutes the term "association". The examiner suggests that the applicant use the terminology such as coated or treated with. Appropriate correction of the claim language is required.

Claim Rejections - 35 USC § 102

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,7,12-16,22 and 27-38 are rejected under 35 U.S.C. 102(b) as being anticipated by Pechold (US 5,356,689).

The prior art of Pechold teaches stain resist compositions comprising stain resist polymers of polymethacrylic acid (column 5, lines 57-65), which meets the claimed limitation of stain resist polymer, epoxy resin comprising 2-3 hydroxyl groups (column 4, lines 40-45; column 2, lines 26-28), which meets the claimed limitation of crosslinking polymer and sulphonated/phenol formaldehyde condensation products (column 5, lines 57-65; column 6, line 2) as claimed in claims 1,7 and 12. Pechold further teaches compositions of pH values below 4 (column 3, lines 25-42 and 63-64) where the pH is adjusted by the addition of sulfamic acid (column 7, line 48) as claimed in claims 13-15.

Pechold further teaches nylon polyamide carpets treated with the compositions (column 6, lines 50-68, column 7 and column 8), as claimed in claims 34-38. Pechold further teaches methods of applying polymers to polyamide fiber substrates and drying the composition on the fiber at temperatures in the range of 50-200°C (column 3, lines 35-38), as claimed in claims 16,22 and 27-33.

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Accordingly, the teachings of Pechold anticipate the material limitations of the instant claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pechold (US 5,356,689) in view of Elgarhy (US 6,207,594).

Pechold is relied upon as set forth above.

Pechold is silent as to the molecular weight of the polymethacrylic acids and does not explicitly teach the claimed molecular weight of 300,000 or greater. However, Pechold clearly suggests the use of polymethacrylic acids in the stain resist compositions and methods.

The secondary reference of Elgarhy, in the analogous art of polyamide fiber treatments, teaches stain resist compositions comprising polymethacrylic acid with average molecular weights between 100,000 and 500,000 (column 3, lines 32-34).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the stain resist compositions taught by Pechold by selecting the polymethacrylic acids of 300,000-500,000 molecular weight as taught by Elgarhy because Elgarhy teaches the utility of these compounds in

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providing stain resistance to polyamide fibers. It would further have been obvious to use these compositions in accordance with the methods taught by Pechold to treat polyamide fibers.

One of ordinary skill in the art would have been motivated to combine the teachings of the two references absent unexpected results.

Claims 2-4,6,9-11,17-20 and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pechold (US 5,707,708) in view of Flat et al. (US 5,993,965).

The primary reference of Pechold teaches stain resist compositions comprising hydrolyzed polymers of maleic anhydride copolymerized with 1-octene (column 2, lines 25-34 and lines 64-67), where up to 30% of the maleic anhydride can be replaced by acrylic or methacrylic acid (column 2, lines 53-54) as claimed in claims 9-11. Pechold further teaches methods of applying polymers to textile substrates (column 4, lines 37-40) as claimed in claims 24-26.

Pechold does not teach stain resistant compositions and methods comprising epoxidized hydroxyl terminated polybutadienes with one vinyl group.

The secondary reference of Flat et al., in the analogous art of polyamide fiber treatments, teaches compositions which provide protective coatings to polyamide fibers comprising epoxidized polybutadienediol having an OH at each end of the chain, specifically Poly BD 600/605, which in addition may have vinyl comonomers (column 2, lines 6-44) as claimed in claims 2-4,6.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the stain resistant compositions taught by Pechold

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by incorporating the polybutadienes taught by Flat, because Flat teaches the effectiveness of the polybutadienes in providing protection to polyamide fibers from the effects of moisture and the exterior environment (column 1, lines 43-50). It would further have been obvious to use these compositions in accordance with the methods taught by Pechold to treat polyamide fibers.

It is prima facie obvious to combine the teachings of the two references, each taught for the same purpose, to yield a third composition for that very purpose. *In re Kerkhoven*, 205 USPQ 1069, *In re Pinten*, 173 USPQ 801, and *In re Susi*, 169 USPQ 423 when ingredients are well known and combined for their known properties, the combination is obvious absent unexpected results. A person of ordinary skill in the fiber treatment art would expect combinations of these materials to behave in the same fashion as the individual materials, absent unexpected results.

Allowable Subject Matter

Claims 5 and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The claims would be allowable because the prior art does not teach or fairly suggest the use of hydroxyl-terminated polybutadiene with at least 2 hydroxyl groups further grafted with maleic anhydride in stain resist compositions or methods.

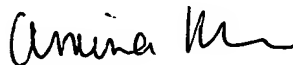
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amina Khan whose telephone number is

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(571) 272-5573. The examiner can normally be reached on Monday through Friday, 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yogendra Gupta can be reached on (571) 272-1316. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Amina Khan, PhD
Patent Examiner
January 29, 2006



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